

## ABSTRACT OF THE DISCLOSURE

[0033] The present invention relates to apparatus, systems, and methods for opening an autosampler sealed sample pan prior to TGA testing. The sealed sample pan comprises a pan, cover, and bail. A notch is formed in the seal sample pan cover. The cover can be opened by applying a concentrated force to the inside of the notch with a punch element integrated into the autosampler. This causes the center disk portion of the cover to be partially sheared and the sealed sample pan to be opened. It also prevents the punch element from touching the sample. A force sensor is used to determine if the cover has been opened. If the cover has been opened, then the sample pan is loaded to the TGA balance. If the cover has not been opened, the autosampler will not load the pan and will automatically move to the next sealed sample pan.